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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/773,299	02/09/2004	Tomomi Yamada	118041	8749

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EXAMINER

ESHETE, ZELALEM

ART UNIT PAPER NUMBER

3748

DATE MAILED: 07/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/773,299

Applicant(s)

YAMADA ET AL.

Examiner

Zelalem Eshete

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-3,5-12 and 14-18 is/are rejected.
- 7) ☒ Claim(s) 4 and 13 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. ____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>02/09/2004</u> | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3,5,6,8-12,14,15,17,18 are rejected under 35 U.S.C. 102(b) as being anticipated by Yoeda et al. (6,276,317).

Regarding claims 1,5,10,14: Yoeda discloses a method and valve drive system for an internal combustion engine, comprising: a plurality of valves (see numerals 66,68); springs urging each of the valves towards a middle position between a fully open position and a fully closed position (see figure 2); magnets each supplied with current to generate electromagnetic force to retain each of the valves at the fully open or closed position against the urging force of each spring (see numerals 90,94), and a controller that is adapted to stop application of current to at least one magnet for a first valve or a first valve group among the valves at a first timing and stop application of current to at least one magnet for a second valve or a second valve group among the valves at a second timing that is different from the first timing when the internal combustion engine is to be stopped (see figure 4). Yoeda also discloses a controller that is adapted to control application current to the magnet in such a way that the magnet generates electromagnetic force to bring the valve to the middle position while

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suppressing free oscillation of the valve when the internal combustion engine is to be stopped (see figure 4; column 10, lines 47 to 57).

Regarding claims 2,6,11,15: Yoeda discloses the valves are intake valves and exhaust valves of the internal combustion engine (see numerals 66,68).

Regarding claims 3,12: Yoeda discloses the second timing is when free oscillation of the first valve or the first valve group has decayed to a specific level (see figure 4).

Regarding claims 8,17: Yoeda discloses the controller is further adapted to stop application of current to the magnet at a predetermined timing when the valve has been brought from the fully open or closed position to a prescribed position close to the middle position (see figure 4).

Regarding claims 9,18: Yoeda discloses the valve is provided in plurality, and the predetermined timing is set for each one of the valves or each one of valve groups formed among the valves (see figure 4).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 7,16 rejected under 35 U.S.C. 103(a) as being unpatentable over Yoeda in view of Toriumi (6,343,577).

Yoeda discloses the claimed invention as recited above; however, fails to disclose a valve lifter lift detector for detecting an amount that the valve is lifted, wherein the controller is further adapted to perform a feedback control such that the detected valve lift amount converges on a prescribed target amount that changes with time.

However, Toriumi teaches a "valve lifter lift" detector for detecting an amount that the valve is lifted, wherein the controller is further adapted to perform a feedback control such that the detected valve lift amount converges on a prescribed target amount that changes with time (see column 1, lines 57 to 65).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Yoeda's system by providing a feedback control as taught by Toriumi in order to achieve a desired output.

Allowable Subject Matter

5. Claims 4,13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Zelalem Eshete whose telephone number is (703) 306-4239. The examiner can normally be reached on Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Denion can be reached on (703) 308-2623. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Zelalem Eshete
Examiner
Art Unit 3748

Z


THOMAS DENION
SUPERVISORY PATENT EXAMINER
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